CLAIMS

1. A packet communication network that is connected to a first external network and a second external network, and that executes packet communication between the first external network and the second external network, the packet communication network comprising:

a parallel network constituted by a plurality of physically or logically independent networks;

at least one classifier that is connected to the first external network and to each of the networks in the parallel network, and that classifies a packet received from the first external network to one of the networks in the parallel network; and

at least one multiplexer that is connected to each of the networks in the parallel network and to the second external network, that multiplies packets received from a plurality of networks in the parallel network, and that outputs multiplexed packet to the second external network.

2. The packet communication network according to claim 1, wherein the classifier classifies a packet according to a feature amount of a form of the packet.

3. The packet communication network according to claim 2, wherein the feature amount is a packet length of the packet.

4. The packet communication network according to claim 1, wherein the classifier classifies a packet according to a feature amount of contents of the packet.

5. The packet communication network according to claim 4, wherein the feature amount is a DiffServ code point of an IP packet.

6. The packet communication network according to claim 4, wherein the feature amount is any one of a protocol number of an IP packet, a destination port number of a UDP packet, and a destination port number of a TCP packet.

7. The packet communication network according to any one of claims 2 to 6, wherein the classifier classifies the packet according to a time series change in a sum of data amounts of packets having an equal feature amount.

8. The packet communication network according to claim 1, wherein the classifier includes a detector that detects a status of traffic of each of the networks in the parallel network, and classifies a packet according to the status of the traffic.

9. The packet communication network according to claim 1, wherein the networks in the parallel network are logically grouped into a plurality of groups so that each of the group includes a plurality of networks that are physically same.

10. The packet communication network according to claim 9, wherein each of the groups include a unit that dynamically changes an allocation of bands to each of the networks in the group.

11. The packet communication network according to claim 1, wherein the multiplexer preferentially processes a packet received from a specific one of the networks in the parallel network.

12. The packet communication network according to claim 1, wherein the multiplexer preferentially processes a packet having a predetermined feature amount.

13. A packet communication method realized on a packet communication network that is connected to a first external network and a second external network, and that executes a packet communication between the first external network and the second external network, wherein the packet communication network includes

a parallel network constituted by a plurality of physically or logically independent networks;

at least one classifier that is connected to the first external network and to each of the networks in the parallel network; and

at least one multiplexer that is connected to each of the networks in the parallel network and to the second external network, wherein the packet communication method includes

the classifier classifying a packet received from the first external network to one of the networks in the parallel network;

each of the networks in the parallel network transferring the packet; and

the multiplexer multiplexing packets received from a plurality of networks in the parallel network and outputting multiplexed packet to the second external network.

14. The packet communication method according to claim 13, wherein the classifier classifies a packet according to a feature amount of a form of the packet.

15. The packet communication method according to claim 14, wherein the feature amount is a packet length of the packet.

16. The packet communication method according to claim 13, wherein the classifier classifies a packet according to a feature amount of contents of the packet.

17. The packet communication method according to claim 16, wherein the feature amount is a DiffServ code point of an IP packet.

18. The packet communication method according to claim 16, wherein the feature amount is any one of a protocol number of an IP packet, a destination port number of a UDP packet, and a destination port number of a TCP packet.

19. The packet communication method according to any one of claims 14 to 18, wherein the classifier classifies the packet according to a time series change in a sum of data amounts of packets having an equal feature amount.

20. The packet communication method according to claim 13, wherein the classifier detects a status of traffic of each of the networks in the parallel network, and classifies a packet according to the status of the traffic.

21. The packet communication method according to claim 13, wherein the networks in the parallel network are logically grouped into a plurality of groups so that each of the group includes a plurality of networks that are physically same.

22. The packet communication method according to claim 21,

wherein each of the groups include a unit that dynamically changes an allocation of bands to each of the networks in the group.

23. The packet communication method according to claim 13, wherein the multiplexer preferentially processes a packet received from a specific one of the networks in the parallel network.

24. The packet communication method according to claim 13, wherein the multiplexer preferentially processes a packet having a predetermined feature amount.